

“THIRD SPACE”: FOUNDATIONS FOR CREATING A COLLABORATIVE ENVIRONMENT BETWEEN SCHOOLS AND UNIVERSITIES FOR THE IMPLEMENTATION OF SCIENTIFIC PROJECTS

Saule S. Begaliyeva¹, Elena S. Shmakova², Assel S. Zhunisbayeva^{3*}

¹ Faculty of Philology, Al-Farabi Kazakh National University, Almaty 050000, Kazakhstan;

² Faculty of Philology and Humanitarian Sciences, Taraz University Named After M.Kh.Dulaty, Taraz 080000, Kazakhstan

³ Faculty of Philology, Al-Farabi Kazakh National University, Almaty 050000, Kazakhstan

Abstract

This study offers a theoretical and methodological rationale for the creation of a collaborative environment—referred to as a “third space”—between schools and universities. This space is designed to enhance and stimulate students’ research activities by engaging them in joint scientific projects alongside representatives of higher education (tutors, mentors, consultants, reviewers, etc.). The article explores the concepts of “collaboration,” “third space,” and “project-based activity” in the context of productive interaction between secondary and higher education institutions in the implementation of research projects.

In this study, the “third space” is conceptualized as a flexible and stimulating environment that integrates the capacities of schools and universities for carrying out scientific research. Its key characteristics are defined as openness, informality, a focus on cooperation, joint inquiry, and the exchange of experience and knowledge. The authors argue for the necessity of joint research activity within the “third space,” given the growing need to prepare competitive individuals equipped with collaboration skills, research competencies, motivation for academic study, and the ability to navigate future career choices.

As a solution to the challenge of organizing and implementing this “third space,” the authors propose the development of a digital platform titled Scientific and Educational Environment: Digital Humanities, which serves as an effective venue for the co-creation of research projects in the field of digital humanities. The findings of this study may be of practical use to administrators in both schools and universities as they develop and implement effective forms of cooperation aimed at enhancing joint research activities.

Keywords: digitalization of education, research-based project activities, collaborative environment, “third space” educational environment, digital platform

1. INTRODUCTION

The updated education program in Kazakhstan, along with intensifying globalization and widespread digitalization, has brought to the forefront the need to develop students’ research skills in the field of digital humanities.

In our country, special attention is given to creating conditions for the successful integration of young people into research activities, as reflected in numerous national policy documents: the Address of the Head of State Kassym-Jomart Tokayev to the People of Kazakhstan “The Economic Course of a Just Kazakhstan”, the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020-2025, the Concept for the Development of Higher Education and Science in the Republic of Kazakhstan for 2023-2029, the Concept for the Development of Preschool, Secondary, Technical and Vocational Education in the Republic of Kazakhstan for 2023-2029, among others.

According to the Concept for the Development of Preschool, Secondary, Technical and Vocational Education of the Republic of Kazakhstan for 2023-2029, “...the main task is the formation of students’

skills and competencies based on interdisciplinary, creative, and project-based approaches to learning, while maintaining continuity...” [1].

Within the context of national priorities, interdisciplinary project-based activity is assigned a key role in improving the quality of education and strengthening continuity between secondary schools and higher education institutions. At the same time, there remains a problem of insufficient support from universities in the preparation of research projects at the school level.

The proposed study aims to improve interdisciplinary research activities in schools by establishing a collaborative “school–university” environment based on the principle of continuity. The primary task of collaboration among scholars, gifted students, teachers, and schoolchildren will be the preparation, development, and implementation of research projects within the modern scientific and educational domain of digital humanities.

The updated education program of the Republic of Kazakhstan places special emphasis on the system-activity approach to learning. One of the effective tools for involving students in an active learning environment is the method of research projects, which has gained wide application in Kazakhstani schools.

However, practical experience shows that school teachers do not fully possess the technologies required to organize and supervise students’ research activities, focusing instead primarily on the practical aspects of the educational process. The project authors propose the development of a theoretical and methodological concept for creating a collaborative “school-university” environment aimed at the preparation and implementation of research projects within the framework of the Digital Humanities concept.

In the context of growing digitalization and the transition of higher and secondary education to both offline and online formats, the need for collaborative and interdisciplinary approaches to learning becomes increasingly relevant and timely.

The aim of this study is to organize a collaborative “school-university” environment as an effective platform for the implementation of research projects in the context of digital humanities - functioning as a “third space” uniting school and university. The study also seeks to provide a theoretical and methodological justification for a system of research-based project activity in digital humanities within the framework of school-university continuity.

Research objectives:

1. To synthesize the findings of Kazakhstani and international scholars on the stated problem and to identify the theoretical, methodological, and pedagogical principles of teaching project-based activity within the context of Digital Humanities. To substantiate the theoretical and methodological as well as the psychological and pedagogical foundations of effective school-university interaction in joint research project activity.
2. To describe the advantages of a digital platform that brings together students, teachers, and researchers from schools and universities within a single research space in digital humanities.
3. To present an innovative pedagogical concept for organizing research work in schools that integrates project-based learning methodology with the principles of digital humanities. To pilot the proposed digital platform and to provide a rationale for its effectiveness.

2. MATERIALS AND METHODS

2.1. Materials

In preparation for the present study, the problem of continuity between school and university in the field of research-based project activity was analyzed based on the works of Kazakhstani and international scholars. As a prerequisite for this research, an exhaustive review of domestic and international literature was conducted using various databases, including Scopus, Web of Science, and Google Scholar. In these

databases, logical operators were applied with the following clusters of search terms: “school-university continuity,” “school-university-science,” “school-university project activity,” “school-university partnership,” “Digital Humanities,” “project activities of schools and universities,” “projects in the field of digital humanities,” and others.

Digital Humanities (DH) represents a major trend in contemporary scholarship, developing at the intersection of humanities and digital knowledge in both research and education. The body of data examined from one of the largest European publishing houses, Springer, made it possible to identify a substantial level of interest within the global academic community in the development of Digital Humanities (more than 98,000 publications on this topic). Of particular relevance among these works are studies focused on the implementation of project-based activity within the Digital Humanities framework. Conferences dedicated to this field are held annually worldwide.

In Kazakhstan, the development of Digital Humanities was initiated by the round table “Digital Humanities in Central Asia,” held in March 2023. During this event, representatives of scientific communities from Central Asian countries discussed issues related to the digital transformation of humanities research and education in universities, the actualization of such research and projects, and the formation of a professional community to support the development of Digital Humanities in the region.

The present study aligns with the interests of the global academic community in the development of Digital Humanities (DH). Within the framework of the project, Digital Humanities is conceptualized as an optimal platform for achieving the research aims and objectives, namely the creation of a collaborative environment that integrates schools and universities for joint research activity within the field of digital humanities.

A content analysis of domestic publications on the stated problem did not reveal scientific studies addressing school–university interaction in the preparation and implementation of research activities. The attention of Kazakhstani scholars has been focused primarily on school-university interaction in the context of ensuring continuity in the development of educational programs. An attempt to develop a “new scientific and educational language” between teachers and researchers is undertaken in the study by S. A. Amanzholov [5, p. 3]. The author presents the “Scientific Laboratory of Fine Arts” established at the Palace of Schoolchildren in Astana, within which the “creation of a specific educational environment with open-ended questions is implemented, where students’ own cognitive activity is initiated and a space for communication among children, teachers, and scholars is formed” [5, p. 4].

In international practice, the necessity of school-university interaction is reflected in the Common European Principles for Teacher Competences and Qualifications, which state that the OECD advocates for partnerships to play a central role in the development of innovative teaching and learning communities, where a bridge exists between theory and practice, as well as between practitioners and those engaged in academic research [6, p. 22].

Such an initiative places school-university relations at the highest level of collaboration. In international research, school-university interaction is conceptualized through the notion of the “third space” (Zeichner, K.), which denotes a collaborative environment in which secondary and higher education institutions interact across various domains, including the joint development and implementation of research projects [7].

The issue of the “third space” is addressed in the study by A. Jackson and J. Burch [8], which proposes the creation of an environment that synthesizes school-based and university-based experience in order to develop new forms of partnership. One of the key outcomes identified by the researchers is “qualified mediation,” aimed at fostering educators’ meta-skills, understood as the ability to teach others how to teach. In the context of the present study, such a meta-skill is defined as the ability to teach others how to design and implement research projects. Alison Jackson and James Burch suggest that mediation within the “third space” has the potential to reconceptualize the roles of educators in both schools and universities.

A review study on the “third space” conducted by V. Daza, G. B. Gudmundsdottir, and A. Lund [9] focuses on examining partnerships as a distinctive environment of interaction between school and university representatives. The authors emphasize that the “third space” constitutes a hybrid zone in which academic knowledge and school practice intersect. The review provides a systematization and analysis of existing studies on how such “third spaces” contribute to the professional development of pre-service teachers. In addition, the study identifies key characteristics of these partnerships, their role in integrating theory and practice, and the conditions that facilitate or hinder the effective functioning of the “third space” [9].

Among such conditions, the researchers highlight, for example, a shared understanding of partnership goals and the readiness of all parties for effective collaboration.

In the book by Corinne A. Green and Michelle J. Eady, *Creating, Sustaining, and Enhancing Purposeful School–University Partnerships: An Introduction* [10], the “third space” is examined as a platform for partnership between schools and universities in the preparation of future teachers, including in the area of developing joint research projects. Of particular importance in this study are thematic case studies, narrative accounts, action research, and longitudinal studies from various countries (e.g., Australia, Canada, Germany, Ireland, Sweden, the United States, Nepal, and Bhutan) that address the construction of interaction between the two educational structures at different levels.

The authors draw attention to the mechanisms for creating and sustaining effective partnerships, as well as to their significance and benefits for all participants within the “third space.” The diversity of such partnerships is highlighted as a factor contributing to their success and to the consideration of the needs of all stakeholders. Particular attention is given to the factors that hinder collaboration and to the risks that arise in the process of joint activity. Corinne A. Green and Michelle J. Eady identify such factors as a lack of time and resources for collaborative work, the absence of a unified system defining roles and responsibilities, inequality between partners (where one party is perceived as “dominant” or “expert” and the other as “subordinate,” thereby undermining trust and cooperation), ineffective communication, the absence of a structured framework, and participants’ insufficient readiness for collaboration.

Undoubtedly, these challenges have a negative impact on the organization of collaboration and on the activities of all its participants. Consideration of these difficulties enabled the authors of the present study to conduct an in-depth analysis of the current situation and to design a convenient, flexible, and supportive environment for school–university interaction in the preparation and implementation of research projects. The creation of a “third space,” understood as a collaborative environment in which high-quality research activity can be carried out, constitutes the main objective of the present project.

Drawing on the analyzed experience, the study identifies key characteristics that a collaborative environment should possess, including openness, informality, a focus on cooperation, joint research, and the exchange of experience and knowledge.

2.2. Methods

The present study was conducted with reference to contemporary teaching methodologies in schools and higher education institutions, the principles of a learner-centered approach to instruction, leading developments in the field of staged competency formation, scholarly works in Digital Humanities, and the experience of leading research centers engaged in the development and implementation of Digital Humanities projects.

Special attention is given to the analysis of the application of the project method in the educational processes of schools and universities in Kazakhstan and in international practice. The functioning of the collaborative environment also constitutes a subject of investigation in the project: general scientific, psychological, and pedagogical studies, as well as works in the fields of methodology, organization, optimization, and collective planning of research project tasks, are examined.

To achieve the aims and objectives of the study, the following methods were employed:

- Theoretical methods: examination and analysis of scholarly sources in psychology, pedagogy, teaching methodology, project-based technologies, and contemporary concepts in the field of Digital Humanities.
- Methods of scientific and pedagogical research: analysis of national regulatory documents, curricula, methodological guidelines, educational standards, textbooks, and teaching aids in the humanities. The planned research projects involving school students are expected to be implemented in accordance with the core competency requirements established for secondary school students in the Republic of Kazakhstan.
- Empirical methods: analysis of effective forms of organizing project-based activity, examination of the practices of leading centers for the development of Digital Humanities, observation, questionnaire surveys, and interviews.
- Experimental methods: piloting of the proposed model for the collaborative organization of students' research activity within the context of Digital Humanities, including analysis of students' research outputs, the use of diagnostic tools, and analytical and statistical processing of the obtained results.

Throughout the research stages, digital programs, services, and applications were extensively employed. Online surveys conducted via Google Forms enabled broad coverage (more than 600 school teachers) and facilitated the efficient collection of relevant data.

SWOT analysis proved effective in examining the research data. Various types of presentations and infographics were created using applications such as Canva, Google Drive resources, and Yandex services. Applications and platforms including Fotobank, Lori, Trello, Pressfoto, and PosterMyWall, among others, made it possible to combine, generalize, and modify ongoing tasks, as well as to edit the shared workspace for all research participants. Issues related to work planning during the study, the development of complex schedules, and the allocation of time and resources were addressed through online organizers such as Personal Goals (manprogress.com), the Any.do task tracker, Miniplan, the online assistant Memos, and other similar tools.

Stages of research objectives' implementation:

1. Research work with theoretical sources in the subject area, examination of the current state of project-based research organization within the "university-school" partnership, and analysis of the experience of leading research centers in the development of Digital Humanities.
2. Conducting a survey among teachers of general education schools in the city of Almaty and the Almaty region, as well as neighboring regions (Taraz and the Zhambyl region, Shymkent and the Turkestan region), in order to identify problems related to the preparation and implementation of research-based project activity.
3. Development of a platform for coordinating project activity, hosting Digital Humanities tools, and representing all participants in research projects, as well as the stages and outcomes of their work. The project authors will provide consultation and coordination for all participants in the collaborative environment at each stage of the implementation of research project activity.

Since the implementation of Digital Humanities tools in the preparation of research projects is intended to begin at the level of secondary education, the authors of the present study conducted a survey involving more than 600 secondary school teachers from the southern region of Kazakhstan [4].

The geographical scope of the study included teachers from the city of Almaty and the Almaty region, the city of Shymkent and the Turkestan region, the city of Taraz and the Zhambyl region, as well as the city of Kyzylorda and the Kyzylorda region (Fig. 1).

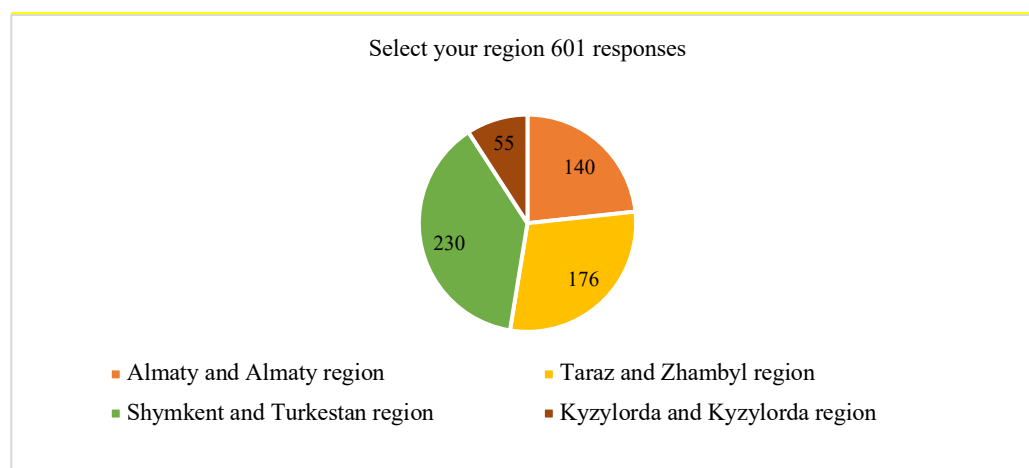


Figure 1. Number of respondents surveyed

The geographical scope of the study is explained by the fact that the authors are employed in educational institutions of the southern region of Kazakhstan and have access to secondary schools in this region. However, the survey instrument may also be applied in other regions of the Republic of Kazakhstan as well as beyond its borders. An expansion of the geographical scope of the study is planned for future research.

The purpose of the survey was to identify challenges and prospects related to the organization of project-based activity in schools. The survey was aimed at determining the range of problems encountered by contemporary school teachers during the preparation and implementation of school research projects at all stages, from topic formulation to project defense.

The target sample of respondents corresponds to the aim and hypothesis of the present study, namely to identify the difficulties faced by school teachers, to explore possible ways of addressing these difficulties, and to assess teachers' psychological readiness for joint research activity with higher education institutions. Particular attention was paid to regional and rural schools, as their remote location often limits access to broadband Internet, making the use of digital tools in the preparation of school research projects problematic.

The survey instrument consisted of a set of questions designed to identify problems in the aforementioned areas.

The research team places particular emphasis on strict adherence to the principles of research ethics. Each stage of project implementation and the publication of its results will be discussed collegially. Respect for sources, copyright, and the results of experimental research is guaranteed. As a measure to protect intellectual property rights, the acquisition of copyright for the developed teaching materials is envisaged.

3. RESULTS & DISCUSSION

3.1 Results of the Literature Review

The experience of Kazakhstani and international scholars, including A. A. Aitbayeva, A. A. Beisenbayeva, G. K. Nurbekova, Sh. E. Nurgalieva, and S. K. Kenzhekhanova, as well as international researchers R. Farrell, K. M. Zeichner, A. Jackson and J. Burch, V. Daza, G. B. Gudmundsdottir, A. Lund, C. A. Green, and M. J. Eady, was synthesized and systematized with regard to the stated problem. As a result, the following principles were identified: theoretical principles (scientific rigor, systematicity and consistency, accessibility, learner activity and awareness, individualized approach, integration of theory and practice, and continuity of education); methodological principles (development, holistic approach, humanism, and activity-based approach); and principles of project-based activity

(interdisciplinarity, research orientation, collaboration, digital creativity, openness, and dissemination of results).

Theoretical materials were collected and systematized according to the following criteria: relevance, scientific validity, practical significance, and alignment with learners' age characteristics. These materials address project-based activity technologies - research-oriented, creative, practice-oriented, and information-based - and the project method as a means of fostering learners' cognitive activity. The principles of learner-centered, activity-based, system - activity, and competency-based approaches were also identified.

The experience of developing research projects within the Digital Humanities framework was examined and generalized, including the use of tools such as Canva and StoryMapJS [12].

The potential of Digital Humanities for research project preparation was identified, including network analysis of humanities data (using Gephi and Palladio), computational linguistics (with the Natural Language Toolkit (NLTK) and spaCy), corpus technologies (Sketch Engine, AntConc, AI-based tools, the Russian National Corpus, and the Kazakh National Corpus), and work with maps involving spatial analysis and visualization (QGIS, ArcGIS, Google My Maps, Recogito), as well as other digital instruments.

The theoretical and methodological foundations (the principle of systematicity, activity-based approach, integrative approach, competency-based approach, and interdisciplinary approach) and the psychological and pedagogical foundations (consideration of age-related and individual characteristics of school and university students; organization of joint activity based on collaboration, mentoring, and tutoring; creation of a motivational and developmental educational environment; formation of research culture and creative thinking among learners; and development of reflective skills and self-organization abilities) of effective school–university interaction in joint research project activity were substantiated.

3.2 Results of the Survey of School Teachers

An analysis of the psychological and pedagogical readiness of schools and universities for cooperation was conducted. Based on the results, focus group discussions and in-depth interviews were held with university faculty members, school teachers, administrative staff of schools and universities, students, and school pupils in the Almaty, Turkestan, Kyzylorda, and Zhambyl regions, as well as in the cities of Almaty, Shymkent, and Taraz.

Based on the collected data, indicators of cooperation were developed, including motivational readiness, institutional support, professional competence, communicative openness, sustainability of interaction, and the personal and professional development of participants.

A questionnaire survey of teachers was conducted to identify difficulties in organizing research-based project activity. The questionnaire included questions such as: Have you acted as a research supervisor for school students' projects? What difficulties did you encounter when preparing students to participate in research project competitions? Are you willing to participate in seminars, courses, or master classes for supervisors of school research projects? Is cooperation with higher education institutions established in your school with regard to the preparation and implementation of students' research projects? Do you require scientific and methodological support in the development and supervision of school research projects? In your opinion, is there a need to create a unified digital platform for school–university cooperation to provide scientific and methodological support for school projects? What suggestions would you make to improve the quality of school research projects? The survey results were presented and analyzed, the most pressing difficulties were identified, and possible ways of addressing them were outlined [4].

The survey results demonstrated that, in their work on school projects, teachers encounter numerous challenges, including difficulties in formulating a research topic (26.5% of respondents); difficulties in developing the scientific framework of a study (defining objectives and tasks, formulating hypotheses, identifying scientific novelty and practical significance, etc.) (24.1% of respondents); and the lack of explanatory work, training seminars, master classes, teaching materials, and methodological guidelines for organizing students' research-based project activity (25.8% of respondents), among other issues.

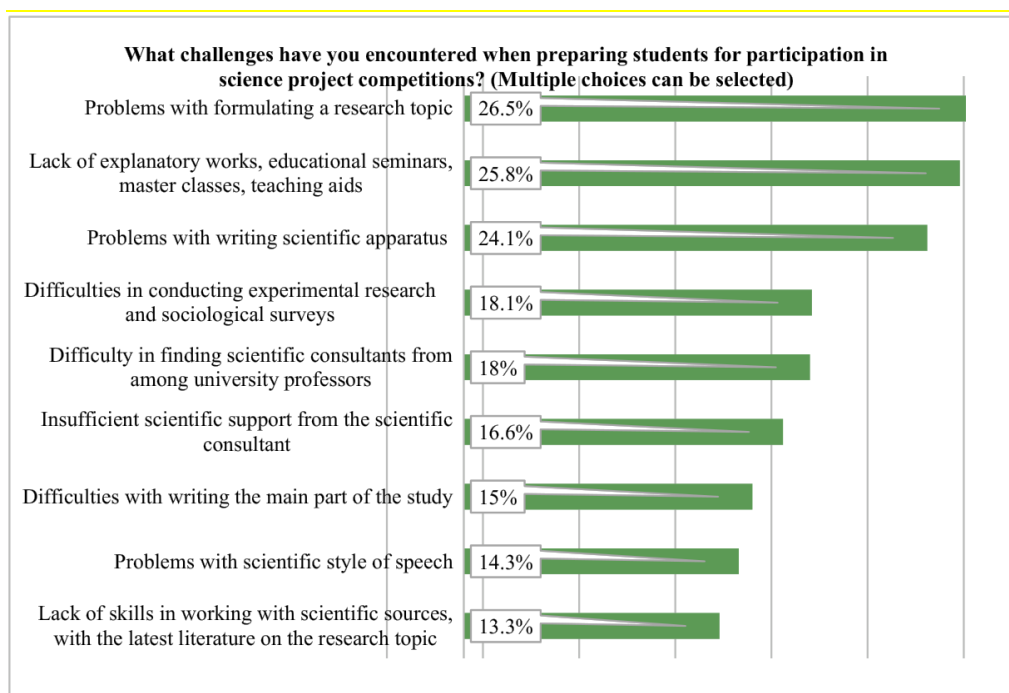


Figure 2. Difficulties encountered by teachers in the preparation of school projects

According to the data presented in the figure, the most pressing problem is the formulation of the research topic. It is well known that the topic encapsulates the core research questions. This stage of preparing a research project is critically important, as it determines the subsequent structure of the study. As noted above, the analysis of scholarly works made it possible to identify a large number of irrelevant topics, often resulting in projects of a purely referential or emotional nature.

Another significant problem identified by the majority of respondents is the lack of explanatory materials, training seminars, master classes, teaching aids, and methodological guidelines for organizing students' research-based project activity. This issue is expected to be addressed in the future through the development of a digital platform for coordinating project activity, hosting Digital Humanities tools, and reflecting all participants in research projects, as well as the stages and outcomes of their work.

In response to the question regarding school teachers' readiness to participate in seminars, courses, and master classes for supervisors of school research projects, more than 75% of respondents answered positively, while an additional 14.9% indicated that they would consider engaging in methodological support for the preparation and implementation of school projects (Fig. 3).

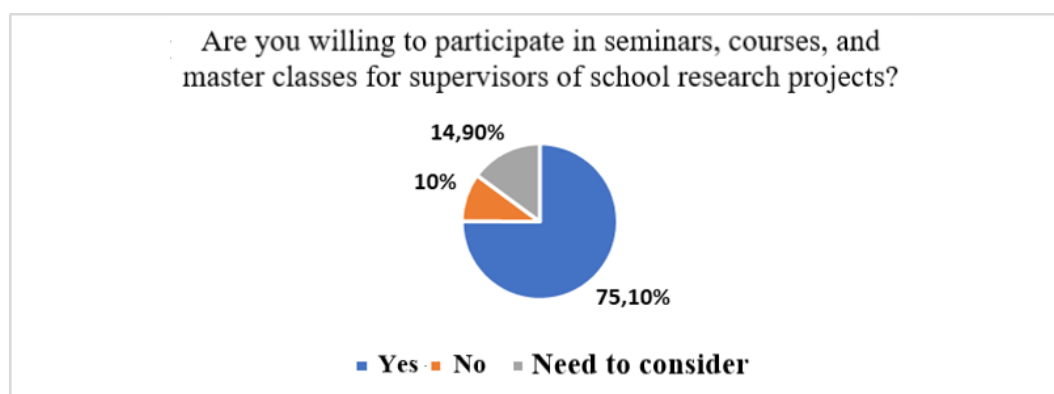


Figure 3. School teachers' readiness for methodological support

Almost 80% of respondents indicated that they require professional support, mentoring, and tutoring when preparing school students for participation in research projects. The lack of methodological assistance, specialized literature, and other issues outlined above has led to a growing need for the establishment of a stable support framework for school teachers engaged in school-based research activity. More than 400 respondents (443; 79.1%) reported a need for methodological support to which, for various reasons, they currently have no access (Fig. 4).

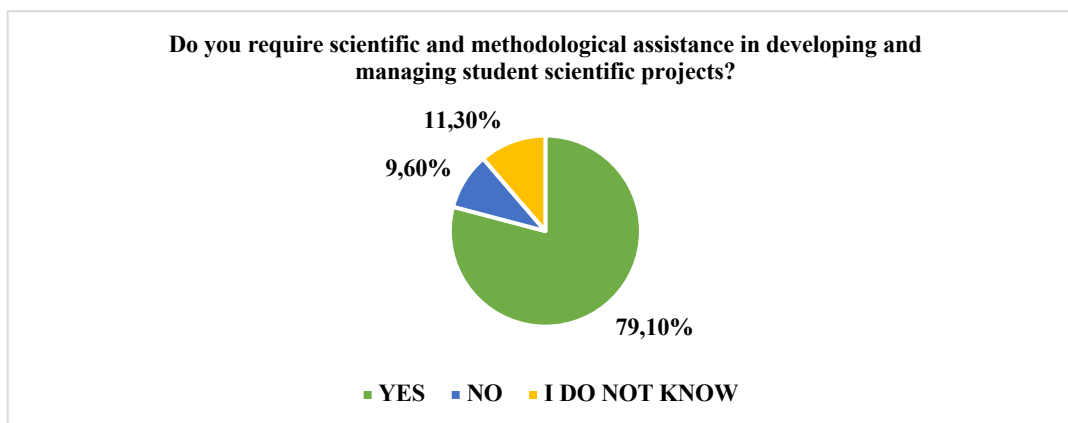


Figure 4. Percentage of respondents requiring methodological support in working on school projects

Thus, the conducted survey demonstrates the need to create a collaborative environment between schools and universities that, in line with the principle of continuity, would promote productive partnership in the development of science in Kazakhstan, beginning at the school level.

The necessity of establishing such a platform is further confirmed by the survey results, according to which more than 95% of respondents believe that there is a need to create a unified electronic platform for school–university cooperation to provide scientific and methodological support for school projects (Fig. 5).

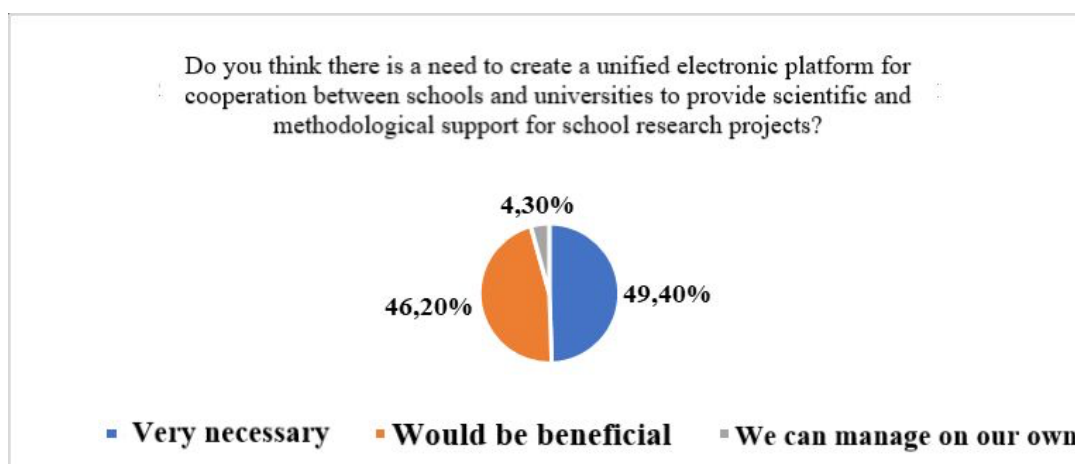


Figure 5. Respondents' readiness for the creation of a unified electronic platform for school–university cooperation

The proposed platform is intended to provide students and teachers with the necessary informational and methodological support for the preparation and implementation of research projects.

As part of collaborative work with school teachers, a series of seminars was conducted to introduce the fundamentals of organizing and managing project-based activity. At subsequent stages of the study, teachers independently implemented the acquired knowledge in their practical work with school students on research projects. Together with students, tutors, and academic consultants, they completed all key stages of a research project, including the collection and systematization of theoretical materials on the selected problem; exploration of the potential of Digital Humanities, including an overview of core methods and tools; formulation of the research topic and planning of project stages; and the conduct of research on the chosen issue.

Formative training was carried out among school teachers in order to identify changes in professional competencies related to the organization and management of research projects within the Digital Humanities framework, as well as among students to assess the development of research skills and the acquisition of digital tools for the analysis and synthesis of Digital Humanities research data.

The collaborative environment includes school teachers, students, tutors, reviewers, and other participants (Fig. 6).

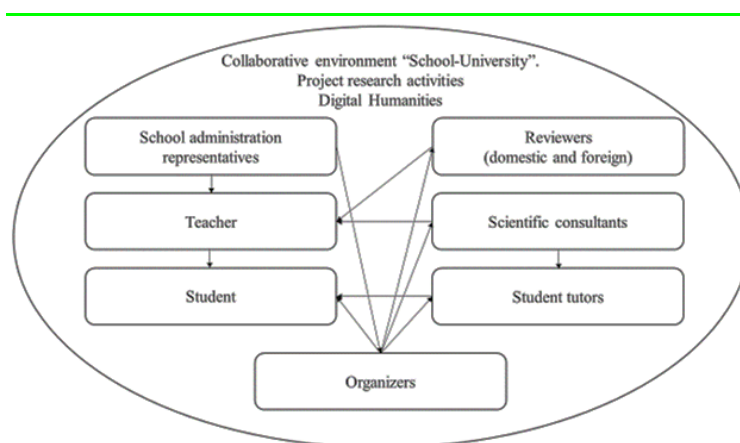


Figure 6. Composition of the collaborative “school-university” environment

3.3 Results of the Development and Pilot Implementation of the Collaborative Digital Platform

An open digital communication and information platform was developed and implemented to ensure the integration of research project participants through contemporary tools for collaboration and knowledge exchange (<https://dh-projects.kz/>).

The structure of the platform is described as an open collaborative environment designed to provide comprehensive support for school-based research projects.

The platform enables user registration for the purpose of uploading and presenting authors’ research projects.

In addition, the platform includes a counter displaying the number of registered users who have uploaded their research. At the time of publication of the present study, 22 school students were registered on the platform, having uploaded a corresponding number of research projects (Fig. 7).

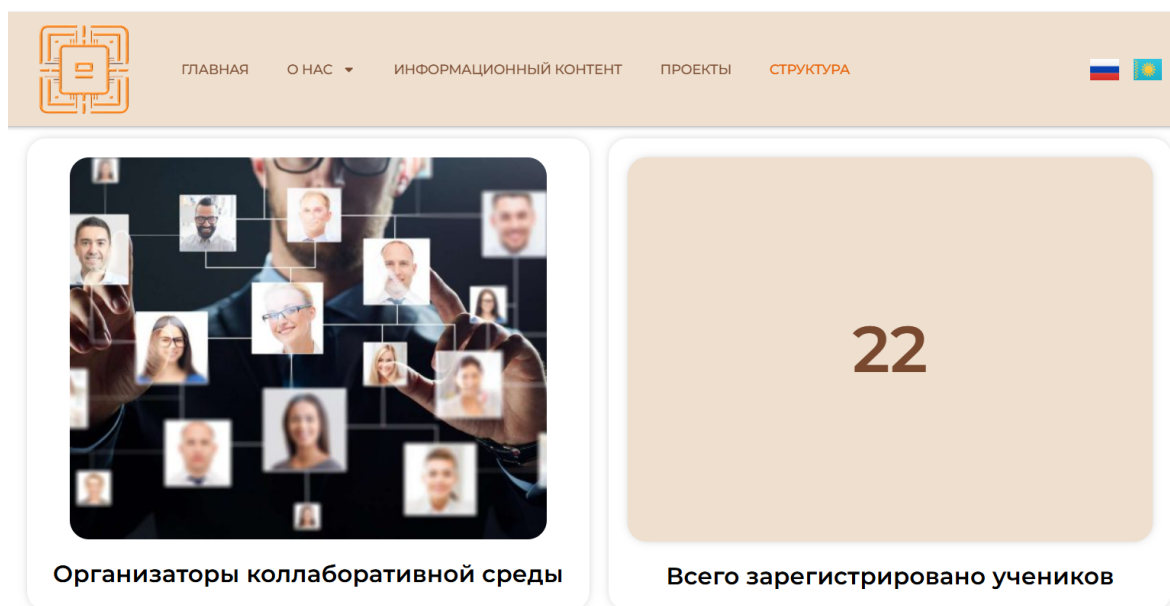


Figure 7. Number of registered users and uploaded projects

The platform comprises informational and methodological, research, and personalized sections. A description of each structural component of the platform is presented in the form of a summary table (Table 1).

Table 1. Structure component of the platform

Section title	Description
“About Us,” “About the Project”	These sections provide information on the mission and objectives of the platform. They include details on project funding and the target audience. The creation of a unified educational and research environment for the preparation and implementation of research projects is articulated.
“Informational Content”	This section contains two types of content: - Informational content, including announcements, information letters, competition programs, and related materials; - Educational content, comprising two teaching and methodological manuals on the organization of project-based activity in schools, as well as popular science articles devoted to Digital Humanities.
“Projects”	This section presents school projects developed within the collaborative framework and using Digital Humanities tools. Project cards include information on the project topic, the academic discipline within which the project was completed, and authorship. The section functionality allows projects to be classified by subject areas, including history, languages, literature, and geography.
“Structure”	This section represents the structure of the educational ecosystem and reflects the roles of platform users. It includes information about the organizers of the collaboration, reviewers, and tutors engaged in joint project work.

The functionality of the “Informational Content,” “Projects,” and “Structure” sections is examined in greater detail, as these constitute the key elements of collaborative activity.

As noted above, the “Projects” section includes the following functional features: 1) uploading a research article; 2) organizing uploaded projects by subject area (history, languages, literature, geography); 3) accessing detailed information about each project.

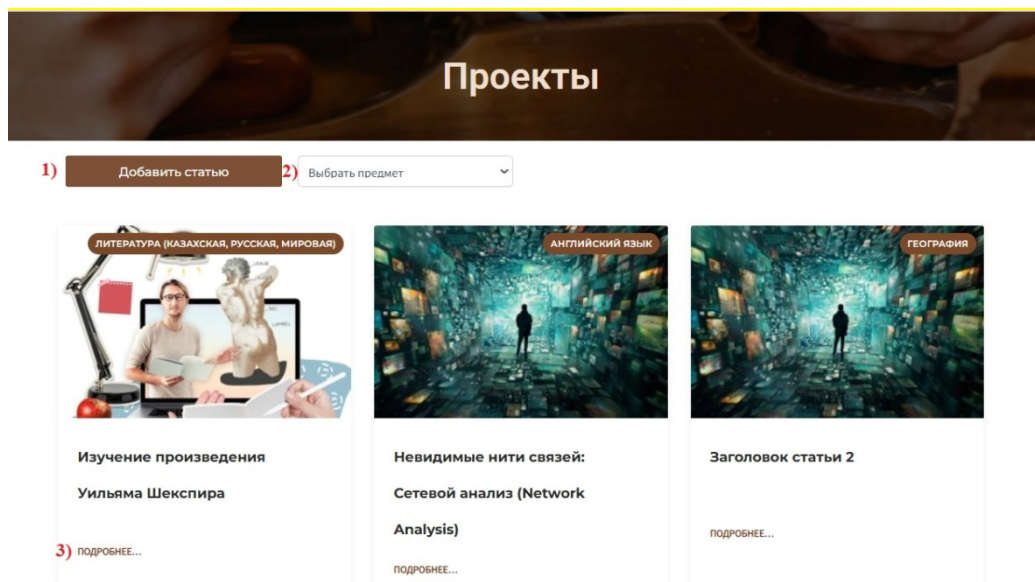


Figure 8. Functionality of the “Projects” section

In the “Add an article” subsection, registered users are required to complete the following actions: upload a project avatar (an image or background), enter the full names of the project participants (the student and the project supervisor), indicate the name of the school, specify the subject area in which the project was conducted, provide the article title, and upload the full project text.

The “Informational Content,” “Projects,” and “Structure” tabs are located at the center of the collaborative space, ensuring openness, accessibility, and the didactic potential of partnership relations. The “Informational Content” section represents a product of university-based academic theory that is accessible to students and practicing teachers, while the “Projects” section reflects the outcomes of students’ and their school supervisors’ reflection, created on the basis of theoretical knowledge and methodological support provided by the university. Both sections are open for commenting, thereby implementing the principles of openness and hybridity characteristic of the “third space.”

The “Informational Content” section contains materials related to the preparation and implementation of projects within the Digital Humanities framework. In addition, it includes detailed instructions for working with the platform and recommendations for uploading projects. The section hosts two teaching and methodological manuals in which algorithms for conducting research are described in detail using language accessible to school students. The “Informational Content” block also includes popular science articles on Digital Humanities, scholarly articles addressing issues of project-based activity, and methodological materials intended for project supervisors, providing detailed instructions and methodological guidance for the development of school research projects. The educational and informational content is created and systematized on the online platform and ensures openness, accessibility, educational value, and the collaborative potential of the platform.

The “Projects” section contains completed school research projects in the humanities (language and literature, history, geography, social studies, sociology, etc.) developed using Digital Humanities tools. The platform’s functionality allows users to easily register and upload their research materials. The “Projects” section serves as a digital archive of research projects implemented with the use of Digital Humanities instruments and is accessible to all platform visitors. Each project includes a commenting interface that enables users to leave feedback, suggest new ideas for project development, and propose

collaboration. This section ensures open access and scalability of collaboration, as researchers interested in a particular project may propose extending the study in a different direction or through the use of alternative tools. In this way, open collaboration supports the systematic functioning of the “third space,” which becomes a platform for accumulating intellectual potential and further scaling it.

The “Structure” section contains profiles of organizers, reviewers, and tutors, enabling students and their school mentors to receive scientific and methodological support, tutoring assistance throughout all stages of project implementation, expert evaluation, and valuable recommendations for improving research activity and final outputs. The “Structure” of the project clearly demonstrates how hierarchical barriers between academic science and school practice are overcome, with roles within the collaborative environment determined by functional relevance rather than formal status.

The unique collaborative composition has ensured a three-level mentoring system for research projects: a school teacher; a consultant-reviewer from among university faculty members; and a tutor for the school student selected from undergraduate, graduate, or doctoral students with experience in project-based activity who assist in conducting the research. Joint work between tutors and school students within a framework of horizontal collaboration contributes to the development of communication skills, which positively influences students’ future professional orientation and the future professional trajectories of university and graduate students. An additional incentive for tutors’ involvement in supervising school research projects is the opportunity for joint publication of research results, including in high-impact academic journals.

The three-level mentoring system can be presented in a more informative way in tabular form (Table 2):

Table 2. Three-Level Mentoring System on the “Digital Humanities Research and Educational Environment” Platform

Functional mentoring status	Role	Function within the collaborative environment
University (academic strategy)	Consultant–reviewer from among university faculty members or researchers	- develops the academic and methodological strategy for organizing the research process; - provides guidance and consultation; - evaluates the final research output.
University (technical support)	Tutor (undergraduate, graduate, or doctoral student with experience in using Digital Humanities tools)	- ensures technical support in working with digital tools; - assists in collecting and annotating scholarly sources; - manages the research project workflow; - provides support and motivation for the school student.
School (practical consultation)	Project supervisor (school teacher)	- ensures the practice-oriented nature of the research; - ensures alignment of the research with the school curriculum; - moderates the practical component of the research.

Thus, the three-level mentoring system constitutes an effective and continuous cycle that ensures synchronized support for school students through university-based academic theory, school practice, and tutor guidance.

To assess the effectiveness of the developed collaborative platform, a comprehensive evaluation framework is employed, based on the platform's functionality, its objectives in supporting Digital Humanities projects, and the representativeness of the educational content hosted on the platform. The survey instrument includes the following criteria:

1. Technical and functional criteria, which assess the platform's accessibility, ease of registration and project submission, and its multilingual capabilities;
2. Academic criteria, which examine the potential of the informational and educational content available on the platform, as well as its representativeness and validity, ensured through participant verification and moderation of uploaded projects;
3. Collaborative criteria, which make it possible to evaluate the quality of horizontal interaction among collaboration participants and to identify the platform's potential for further experience exchange between schools and universities within the framework of research project implementation.

At the current stage, the platform is still undergoing testing. In the future, it is planned to evaluate its full potential and to publish the results of its usability testing.

4. CONCLUSIONS

Thus, the conducted study made it possible to substantiate the creation of the "third space" as a collaborative environment between schools and universities. This space is understood as a flexible, open, and informal environment oriented toward cooperation, joint research, and knowledge exchange. The primary purpose of such a space is to activate and enhance school students' research activity through their involvement in joint research projects with university faculty members and specialists (tutors and mentors). The need to establish a "third space" is driven by the growing demand for the development of a competitive individual possessing collaboration skills, research competencies, and motivation for self-development.

The survey conducted among school teachers demonstrated that, in their practice of working on school projects, teachers face numerous difficulties, including problems with formulating research topics (26.5% of respondents), difficulties in developing the scientific framework of research (defining objectives and tasks, formulating hypotheses, identifying scientific novelty and practical significance, etc.) (24.1% of respondents), and the lack of explanatory materials, training seminars, master classes, teaching aids, and methodological guidelines for organizing students' research-based project activity (25.8% of respondents) [4]. The identified problems in organizing and implementing research activity in the format of school projects were intended to be addressed through the creation of a joint supportive open environment - the "third space." This environment was conceptualized as an effective platform for the implementation of joint (school–university) research projects.

As a concrete instrument for implementing and organizing the "third space," the digital platform Digital Humanities Research and Educational Environment was developed and positioned as an effective venue for collaborative projects. The educational potential of the platform lies in the development of digital competencies among all collaboration participants; the exchange of experience and knowledge between schools and universities; the accumulation of a body of research projects conducted within the Digital Humanities framework; and the development and systematic enhancement of school students' research skills. The scientific potential of the platform consists in advancing the methodology for applying Digital Humanities tools and artificial intelligence capabilities to research in the humanities. Digital Humanities represents a relatively new, insufficiently developed, and not yet fully conceptualized field within Kazakhstani scholarship.

In this regard, it should be noted that research conducted within the framework of the "school–university" collaboration is characterized by a high degree of novelty and relevance in the context of

Kazakhstani science. The platform itself thus emerges as a flagship initiative in Digital Humanities research in Kazakhstan.

The results of the study are intended to support school and university administrators in the development and implementation of effective forms of cooperation in the field of research activity.

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